

Application No.: 10/681850

Case No.: 58616US002

REMARKS

Claims 1-45 are pending in the present application. Claims 1-8, 10, 13-16, 19, 20, 28-31, 33, 36 and 37 are rejected. Claims 9, 11, 12, 17, 18, 21-27, 32-35 and 38-45 are objected to. Claim 28 has been amended to clarify that the first lens is a positive lens. No new matter has been added.

Applicant thanks the Examiner for indicating that claims 9, 11, 12, 17, 18, 21-27, 32-35 and 38-45 contain allowable subject matter.

Rejections under 35 U.S.C. § 102**Claims 1-5, 8, 10, 13-16, 19, 20, 28, 31, 33, 36 and 37**

Claims 1-5, 8, 10, 13-16, 19, 20, 28, 31, 33, 36 and 37 are rejected under 35 U.S.C. § 102(b) as being anticipated by Morimoto (U.S. Patent No. 4,953,926). Morimoto teaches a system in which light from a semiconductor laser (1) is collimated using a collimator lens (2). The light passes through a cylindrical lens (3) and then through a deflector (4). After the deflector, the light passes into an anamorphic scanning lens unit which converges the rays of light that have been deflected by the deflector. (col. 3, line 50 – col. 4, line 3).

The anamorphic scanning lens unit has two lenses, L1 and L2. The first, lens, L1, is a negative lens. The scanning lens unit has a shorter focal length in the auxiliary scanning cross section than in the main scanning direction and forms an image at a finite distance with the object point lying at a focusing point F1 where the image is formed with the cylindrical lens. (col. 4, lines 25-29).

To anticipate a claim, the reference must teach every element of the claim. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628,631, 2 USPQ2d 1051 1053 (Fed. Cir.) 1987). “The identical invention must be shown in as complete detail as is contained in the...claim.” Richardson v. Suzuki Motor Co., 868 F. 2d1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Therefore, if a reference does not teach every element of the claim, then the reference does not anticipate the claim (see MPEP § 2131). Applicants respectfully assert that Morimoto fails to teach all the elements of claim 1.

Application No.: 10/681850

Case No.: 58616US002

The invention of claim 1 is directed to a light emitting unit that has a light source for emitting a beam of output light and a refractive optical unit disposed in the beam of output light. The refractive optical unit includes a first lens formed of inorganic material that has a refracting surface that produces spherical aberration. The first lens is disposed so as to reduce the divergence of the beam of output light from the light source. The refractive optical unit also includes a second lens formed of plastic that is disposed in the beam of output light. The second lens has a refractive characteristic that substantially compensates spherical aberration introduced by the first lens.

The rejection is based on the assertion that the scanning lens unit, consisting of L1 and L2, constitutes the refractive optical unit of the claim. Applicants respectfully disagree with this assertion. In the Office Action, Morimoto's lens L2 is equated with the first lens of the refractive optical unit, the lens that introduces spherical aberration, and Morimoto's lens L1 is equated with the second lens of the refractive optical unit, the plastic lens that compensates for the spherical aberration.

It is stated in the Office Action that the second lens (L1) can be made from plastic. This is incorrect. The citation provided in the Office Action, col. 5, lines 46-51, states "[i]n addition, because of the concave toric action of the first lens L1, the second lens L2 does not necessarily have a very high refractive index and, instead, it may be formed of a low index optical glass or plastic material." In other words, Morimoto teaches that the positive lens L2 can be made of plastic. However, L2 is the positive lens that introduces the spherical aberration. Morimoto does not state that the lens L1, the lens that can compensate for the spherical aberration in L2, can be made of plastic and, in fact, discusses the advantages of making L1 out of a high index material, which one of ordinary skill would understand to point away from using plastic.

To summarize, according to the claimed invention, the first lens reduces the divergence of the light and the second lens, made of plastic, compensates for the spherical aberration of the first lens. In Morimoto's system, however, the positive lens, L2, which can reduce divergence, is made of plastic, while the negative lens, L1, which compensates for spherical aberration, is not taught to be made of plastic.

Additionally, Morimoto does not teach that his combination of lenses is used to reduce the divergence of the light from the light source. Instead, in Morimoto's system it is the

Application No.: 10/681850

Case No.: 58616US002

collimating lens 2 that reduces the divergence of the light from the light source, so as to collimate the light.

Accordingly, since Morimoto fails to teach all the elements of claim 1, claim 1 is not anticipated and is allowable over the cited art.

Claims 2-5, 8, 10, 13-16, 19 and 20, which depend from claim 1, and further define the invention of claim 1, were also rejected under 35 U.S.C. §102(b) as being anticipated by Morimoto. While Applicants do not acquiesce with the particular rejections to these dependent claims, it is believed that these rejections are moot in view of the remarks made in connection with independent claim 1. Therefore, dependent claims 2-5, 8, 10, 13-16, 19 and 20 are also in condition for allowance.

Claim 28 is directed to a lens assembly for managing light. The assembly includes a first lens formed of an inorganic material and having a spherical refracting surface. The first lens is disposed on a optical axis of the assembly. A second lens, formed of plastic is disposed on the optical axis. The second lens has a refractive characteristic that substantially compensates spherical aberration introduced by the first lens.

In the invention of claim 28, the first lens is positive and has a spherical refracting surface. The second lens, made of plastic, compensates for the spherical aberration of the first lens. In Morimoto's system, in contrast, the positive lens, L2, can be made of plastic, while the negative lens, L1, which compensates for spherical aberration of L2, is not taught to be made of plastic.

Accordingly, Morimoto fails to teach all the elements of claim 28, and claim 28 is allowable thereover.

Claims 31, 33, 36 and 37, which depend from claim 28, and further define the invention of claim 28, were also rejected under 35 U.S.C. §102(b) as being anticipated by Morimoto. While Applicants do not acquiesce with the particular rejections to these dependent claims, it is believed that these rejections are moot in view of the remarks made in connection with independent claim 1. Therefore, dependent claims 31, 33, 36 and 37 are also in condition for allowance.

Application No.: 10/681850

Case No.: 58616US002

Rejections under 35 U.S.C. § 103

Claims 6, 7, 29 and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Morimoto in view of Gaebe (U.S. Patent No. 5684,901). It is stated that Morimoto fails to teach that the first lens is a ball or hemispherical lens, but that Gaebe teaches the use of a ball lens in a spherical aberration compensated system. It is further stated that it would have been obvious to one of ordinary skill in the art to use a first ball lens that has a subsequent lens for aberration correction since this is routinely done in systems that have a first lens producing spherical aberration that is corrected by a spherical lens.

Gaebe teaches a system in which a ball lens (32) is used to focus light from a semiconductor laser (10). The light is brought to a focus at an intermediate marginal focus (44) and is then passed through a second lens (48) that can compensate for the spherical aberration in the ball lens.

Three criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference, or combination of references, must teach or suggest all the claim limitations. MPEP § 2142. Applicants respectfully traverse the rejection since the prior art fails to disclose all the claim limitations and there would be no motivation to combine the references as proposed by the Examiner.

First, Gaebe fails to remedy the deficiencies of Morimoto discussed above. In particular, Gaebe fails to teach or suggest that the first lens, the positive lens, is made from an inorganic material, while the second lens, the lens that compensates for the spherical aberration, is made of plastic. Since claims 6, 7, 29 and 30 depend from allowable claims 1 and 28, these claims are also allowable.

Furthermore, one of ordinary skill would not be motivated to combine Gaebe's ball lens with Morimoto's lens system in the manner described in the Office Action. The light emitted from a semiconductor laser diverges very rapidly and, therefore, requires a very strong lens to collimate or focus the light. The ball lens is known to be a very strong lens and is widely used for collecting the light that diverges out of a semiconductor laser. Morimoto's lens system, however, is not used for collecting the rapidly diverging light that comes out of the laser: this is

Application No.: 10/681850

Case No.: 58616US002

dealt with by his collimating lens (2). Morimoto's lens system is used instead to provide a relatively aberration-free focus when after the laser light has passed through a deflector system, exemplified in Morimoto by a rotating mirror system. Since Morimoto's lens system is not used in a situation where the light diverges as rapidly as it does out of a semiconductor laser, one of ordinary skill would not be motivated to include a ball lens in Morimoto's system, in the manner suggested in the Office Action.

Accordingly, since the proposed combination of references fails to teach all the elements of the claims, and since one of ordinary skill would be motivated to combine the references in the manner suggested in the Office Action, Applicants respectfully assert that claims 6, 7, 29 and 30 are allowable over the proposed combination of references.

In view of the reasons provided above, it is believed that all pending claims are in condition for allowance. Applicants respectfully request favorable reconsideration and early allowance of all pending claims.

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